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Coherent Phase Data Segment Layout in Data Storage Device

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Field of the Invention

The present invention relates to the organization of data in data storage devices, and more particularly, to the storage, retrieval and organization of radially coherent data segments in disk drives.

Background of the Invention

Data storage devices such as disk drives provide data storage and retrieval in a variety of applications. A disk drive includes a spindle motor for rotating a disk, and a transducer head that moves radially across the disk to read from and write to concentric tracks on the disk. Many disk drives include multiple disks separated by spacer rings and stacked on a hub attached to the spindle motor, and multiple transducer heads that each read from and write to a different disk surface.

The tracks are each divided into circumferential divisions that are arced along the disk radius. The circumferential divisions each include a servo sector followed by a data sector. The servo sector contains servo information for positioning the transducer head over the track, and the data sector contains user data from an external device. The transducer head reads the servo sectors to position itself along the track as it reads and writes to and from the data sectors. In addition, the servo sectors are embedded in the tracks along servo wedges that extend radially across multiple tracks.